

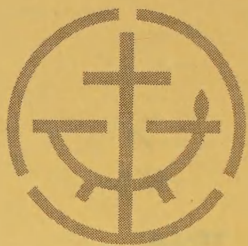
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NATURAL LAWS AND
HUMAN HOPES

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BY
Max Carl
M. C. OTTO, 1876-
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TO
THE MEMORY OF
WALTER L. RANKIN

PREFACE

The essay which follows, although complete in itself, may also serve to round out a discussion begun elsewhere. In three chapters of a book called *Things and Ideals*, the author considered the relation of science and the higher life. The treatment was largely negative, devoted to showing that the current compromises are subversive of what is best in both these adventures of the human spirit. The present study is an attempt to provide a more positive introduction to the question.

At the conclusion of the essay will be found explicit directions to the books and periodicals from which quotations have been taken. The references are arranged under the pages on which they appear in the body of the essay.

While the essay aims at a certain completeness of conception, it does not aim at all to be exhaustive in treatment. It seemed desirable to present the view as a whole in small compass, and this made it necessary to be severely brief. The central theme of the book will be found in sections four to seven. Further developments of the arguments presented in sections five, six, and seven should readily suggest themselves, and the imaginative reader should be able to guess the bearing of the whole discussion on the higher issues of life.

The important thing is—*not to become resigned.*

Charles Vildrac

Blindness to the values that lie beyond the vale of mere technical abilities is a condition against whose disintegrating effect must be summoned all the powers of a purposeful philosophy.

Hans Vaihinger

It is in youth that the questions of mature age can alone be settled, if they are ever to be settled, and unless we begin to think about adult problems when we are young all our thinking is likely to be in vain.

Havelock Ellis

And after all, those of us who believe with Mr. Lester Ward, the sociologist, in the superiority of the artificial to the natural, may see in what has been done some ground for believing that mankind yet may take its own destiny consciously and intelligently in hand.

Justice Holmes

NATURAL LAWS AND
HUMAN HOPES

I

IN the distance the sun was setting behind the Baraboo Bluffs, those ancient masses of rock incredibly old when reptiles ruled the earth. Always colorful, they were now a hazy gold. A gray mist was stealing into the undulating valley; only a steeple and scattered clumps of woodland were still touched by the waning fire. Below flowed the silent, dusky Wisconsin, once a bustling highway of traffic, now deserted but for an occasional fisherman. Gradually the light died out of steeple and woodlands. A little longer it tarried on the heights along the river, turning them to copper-red. For a last moment a scraggly, overhanging cedar was tipped with amber-green. Then the sun vanished.

As if on signal a blue heron lifted himself from the oozy bank and turned toward his distant nest. Hanging above the stream he hitched himself awkwardly together, drawing in his

extended neck, raising his dangling legs to position. But almost before one could point he was in steady graceful flight, his long bill advanced like a spear before him, his great legs trailing stiffly behind, his powerful wings moving in slow, rhythmic beat. Presently he, too, vanished; lost in the gathering twilight; and a haunting peace brooded over the scene.

The sun vanished and the heron vanished. Were these in some sense independent occurrences or mere episodes in one vast drama? Mere episodes in one vast drama—if we accept the confident verdict of authorities. “Whilst the earth glides round her axle,” the famous Archbishop Paley was wont to remark, “she ministers to the alternate necessities of the animals dwelling upon her surface, at the same time that she obeys the influence of those attractions which regulate the order of many thousand worlds.” This nice adaptation of the animal state called weariness to the solar event called night was to him a perpetual wonder, connecting, as it did, “the meanest individual

to the universe itself: a chicken roosting upon its perch with the spheres revolving in the firmament." How ill-contrived if chickens had been fashioned to get sleepy at sunrise!

Laplace, speaking for science, is equally decisive. The scientist naturally talks less quaintly than the theologian, but with no less finality. The fact is, according to him, that "an intelligence who for a given instant should be acquainted with all the forces by which nature is animated and with the several positions of the beings composing it . . . would include in one and the same formula the largest bodies in the universe and those of the lightest atom." The cosmos is a great machine in which all parts mutually imply each other.

To the same purpose writes Emerson, the mystic, to whom neither purposive theism nor purposeless materialism was palatable. He shows himself as convinced as Paley and Laplace that all events in the universe march forward under one command. We do indeed "see the world piece by piece, as the sun, the moon, the

animal, the tree"; yet every part and particle is equally related to "the Eternal One," the timeless, spaceless, uncaused but all-causing Oversoul. For

. . . all things
 Are of one pattern made; bird, beast or flower,
 Song, picture, form, space, thought and character
 Deceive us, seeming to be many things,
 And are but one.

This determination to catch the world's multiplicity and variety in a single net appears to be an incurable bias of the learned mind. It was classical tradition when Plato began to think, and it has remained such through all cultural vicissitudes to the present. Yet on the face of things, in the realm of the experienced, the flight of the heron involved one remarkable factor to which there is nothing strictly analogous in the sunset. The flight was no doubt implicated in the physical environment. It was an adjustment to certain changes in nature—the coming on of evening, the lowering of temperature—which acted on it as stimuli.

But the heron not only flew; he flew towards a nest. The flight had direction. The nest was in some sense aimed at. While the heron's behavior was a response to the immediately present environment, it was no less a response to the distant goal. Or we may say, if we prefer, that the distant goal was a constituent element in the stimulating environment taken as a whole. Let the awareness of this goal be as dim and blurred as you please, it participated in the determination of the specific flight activity. Which is to say that the objective point or terminus of the flight entered into it as an agent of its development; or, less technically, that a desire for the nest, however vague or however induced, was influential in what happened.

We may therefore think of the heron as a center of outgoing desires in the process of attempted realization and subject to external conditions; as a smaller world within, but also over against, a larger world. Not that there is any recognition of this. The very distinction between individual organism and conditioning

environment has not yet dawned, hence there can be no awareness of conflict between them. There exists for herons no problem of natural laws and heron hopes.

For many centuries men were equally innocent and equally without the problem. "Beholding," as Æschylus says, "they beheld in vain, and hearing, heard not, but like shapes in dreams, mixed all things wildly down the tedious time." We do not know out of what crisis, nor in just what manner, the distinction between self and not-self first took shape in some gifted mind to become in time an element of tribal tradition. We only know that it did. The distinction achieved, it was a feat of the imagination when so simple a matter as the recurrence of the seasons was first divined. Early men were without even this now obvious principle of order. "There came to them no steadfast signs of winter," says the same poet, "nor spring flower-perfumed, nor summer full of fruit." So too it was a stupendous intellectual step when the sun was no longer hailed as

new every morning, but was identified with yesterday's and tomorrow's. And through what immeasurable stretches of time did men wonder at the stars before they were able to speak of them as soldiers marching in orderly array like the armies before Troy! Other centuries passed before the suspicion was entertained that what are now called external things might in their totality be thought of as a related whole, a cosmos.

But the time came when some daring observer, now forgotten, could sweep the spectacle of life and things in one gaze and think of it as belonging together. The time came when the poet-philosopher Xenophanes suffered his care-worn soul to be tossed up and down the land of Hellas that he might sing, "The All is One." It was a dramatic moment; the most dramatic in human history. Perhaps it was the most tragic as well. For the discovery of the world was not the end but the beginning of a quest. It made man conscious of the precariousness of his hopes in the vast universe and aroused in

him the cosmic homesickness which no material conquest has been able to appease. Henceforth there was the problem of nature and human hopes. Pondering, man looked into the flaming west, watched the paler orb rise over the mysterious marshes, studied the procession of the stars. Pondering, he listened to the voice in the tree tops, in the gurgling brook, the gentle rain, the rushing storm, the wild sea. What does it all mean? he asked. What is the unseen Something behind things, within things, which holds them together and impels them on? And what bodes that Something of good or ill to me, to my kind?

II

WHEN written history begins man is found to have made progress in formulating a theory of existence. Just what the earliest thinkers believed themselves to have discovered regarding the world and man's place in it is not so clear as we wish it were, for their writings remain to us only in scattered fragments which are but partially understood and the authenticity of which is often questionable. But it is evident that from early in the sixth century B. C. (to speak only of the Occident), the problem was attacked by men who knew what they were about and who worked in the scientific spirit.

Now owing to deep-going economic, social, and political changes introduced into Greek life as a result of the struggle with Persia, new impulses and ideas took possession of the Greeks. Existing structures of society were undermined, and traditional theories of life proved unequal

to the new conditions. The intellectual ferment caused by these changes occurred when thinkers of extraordinary power and originality were alive, occurred to some extent *because* they were alive, so that the outcome was the achievement of new theories profound enough to have influenced the thoughts and emotions of men ever since.

These great searchers for a new concept of the world and life took two very different routes in their investigations. Some, believing it to be more hopeful to take as starting point the objects presented to the senses, turned outward to the realm of things; others, having greater faith in the objects disclosed to the mind, turned inward to the realm of thoughts. This difference in direction was not a matter of whim. The one group was primarily concerned with making the world *intelligible* by describing it as it actually is. The other group was more interested in making life *meaningful* by discovering what is of most worth. The difference must not be taken in an absolute sense. It was a

difference in emphasis, but a difference in emphasis which had important consequences.

As the outstanding figure in the first group we may select one of the greatest writers of antiquity, Democritus, although the theory of things which he developed goes back for its beginnings to his master, Leucippus, and to other speculative minds. According to this view, which we must piece together from fragments, the world which appears so rich in qualities (for we experience tastes, odors, colors, sounds, feelings, thoughts, what not), is in fact but one undifferentiated stuff. This stuff is matter. Besides matter there exists just one more thing, and there is no third kind of reality. This other thing is space, empty space. Matter which has no space in it, and space in which this matter moves—these are the sum of reality.

Matter, however, does not exist in one undivided lump; for if it did, how explain the experienced variety of things and change? It exists in tiny, invisible particles, called atoms. "By use," said Democritus, "there is sweet, by use

there is bitter; by use there is warm and by use there is cold; by use there is color. But in sooth there are atoms and the void." Aristotle, discussing him, makes the picturesque suggestion that the atoms "are like the so-called motes which are seen in the sunbeams that enter through door-ways," and that "in such a mixed heap of seeds," according to this theory, are to be found "the elements of the whole natural world." The number of these atoms is infinite, and they have always existed. They are identical in substance, differing only in size, shape, and position. Eternally in motion, it naturally happens that they bump into one another, and this creates centers of rotation, or vortexes, in which the bulkier atoms move toward the center, the lighter atoms toward the periphery. It also happens that these vortexes become involved with each other, forming larger, more complicated ones. The atoms gathered together in this way form patterns of various kinds, due to differences in the shape and size of the atoms themselves and their arrangement with

reference to each other. These more or less temporary patterns of atoms are all that is real in what we experience as thought or thing; and their falling apart into other patterns accounts for our experience of change.

What thus actually exists as the substratum of the panorama we call the world, mental as well as physical, is an eternal dance of little space-filling particles of homogeneous matter: a dance composed of an unlimited number of dances within dances, each moving to its own rhythm while participating in larger rhythms and in the rhythm of the whole. This dance is not a matter of caprice, but of law. "Naught happens for nothing," according to Leucippus, "but all things from a ground and of necessity." Yet while every movement in the dance is inevitable it is not purposed. The necessity which rules in the universe is blind. Everything moves as it must, but there is no aim, no goal.

This concept of the world as a play of mechanical forces was unacceptable to some of Democritus' compeers, and perhaps the best

hint we have of the chief reason for their opposition is given by Socrates in that memorable conversation with his friends just before his death. "When I was young, Cebes," he is reported in the *Phædo* as saying, "I had a prodigious desire to know that department of philosophy which is called the investigation of nature; to know the causes of things, and why a thing is and is created or destroyed appeared to me to be a lofty profession." But the study of the problem, he confesses, only confused him. To his great delight he then heard of a book by Anaxagoras in which mind was made the disposer of all things. This delighted him because, as he expresses it, "If mind is the disposer, mind will dispose all for the best, and put each particular in the best place." This seemed to him an admirable idea, since in that case qualitative differences, especially those upon which we rest ideas of worth, would be genuine realities instead of illusions, and the whole of things would not be a purposeless machine but the expression of a great and a good purpose. "For I could not imagine," he continues in his remi-

niscence, "that when he spoke of mind as the disposer of them, he would give any other account of their being as they are, except that this was best; and I thought that when he had explained to me in detail the cause of each and the cause of all, he would go on to explain to me what was best for each and what was good for all. These hopes I would not have sold for a large sum of money, and I seized the books and read them as fast as I could in my eagerness to know the better and the worse."

Had Anaxagoras taught him to know the better and the worse he would have taught him what is of most worth. But he completely failed. "As I proceeded," Socrates says, "I found my philosopher altogether forsaking mind or any other principle of order, but having recourse to air, and ether, and water, and other eccentricities." To Socrates this appeared like saying that while in general his mind ruled his actions, what caused him now to sit there waiting to die was his muscles and bones, rather than his mind. But was it not obvious, he asked his friends, that if his legs were in command he

would be running away? By the dog he would! Anaxagoras mistook the means used for the reason why they are used. Which leads Socrates to state very clearly his reason for being dissatisfied with materialism. "I wonder," he says, "that they cannot distinguish the cause from the condition, which the many, feeling about in the dark, are always mistaking and misnaming. And thus one man makes a vortex all round and steadies the earth by the heaven; another gives the air as a support to the earth, which is a sort of broad trough. Any power which in arranging them as they are arranges them for the best never enters into their minds." In other words, he wants something more than a description of existence in quantitative, mechanical terms.

According to Socrates, then, the extended studies engaged in by the naturalists to find out what the world is like had yielded no clue as to what it is for; had made it no clearer what the inner or underlying purpose of it all is. In spite of the accumulated information men were no less in the dark regarding the meaning and pur-

pose of life. Yet this was exactly what it concerned them most to know. And judging such failure to be the inevitable upshot of the study of physical things, he turned his back upon all similar investigations and, as is well known, devoted himself to intellectual obstetrics, seeking to bring forth from the recesses of men's minds the truth that had eluded the students of nature.

The quest of Socrates was given a more radical turn, a turn towards transcendent idealism, by his greatest pupil. According to Plato's view (disregarding disputes over interpretations) the principles of order and beauty in the universe, while they may in a sense be discovered in the human mind, are in their nature independent, supermundane entities. Ultimate reality now becomes a hierarchy of model forms or types, called Ideas, having eternal unchanging locus in a supersensible realm of utter being. Man's earthly life, the fleeting existence in which he toils and strives and enjoys, together with the globe upon which the adventure takes place, borrow such reality as they may have from the

divine essences which somehow shine through them. The world in its real nature is consequently not a vast complexity of pulverized matter, whirling in a blind dance of necessity (a theory which Plato treats with contempt), but an august assemblage of meaningful forms, which, as a student of Plato has said, "are as the gods sitting on their unshakable thrones, seen through the snow-storms of illusions." And the world in its real being is "ordered and governed," to use Plato's own words, "by a marvelous intelligence and wisdom," reflecting the imperium of Ideas, with the supreme Idea, the Idea of the Good, at the head. This is the truth disclosed to one who, "despising the things which we now say are, and looking up to that which really is," contemplates that "by the contemplation of which even divinity is divine."

Such were the antithetical conclusions at which these great lines of inquiry arrived. What bearing did they have on the hopes of mankind?

III

WE must remind ourselves that metaphysical speculation is indulged in by the very few. Men and women taken generally, of whatever station, have no appetite for it. Between the two philosophic peaks we have distinguished—idealism on the right, materialism on the left—lay the great plateau of common sense. Here swarmed and toiled the mass of men. The Greek you met in the street, the market place, the shop, or at the wharf, acted more like the heron than the philosopher. He bent his energies to attaining ends which appealed to him, and he made shift to control the means upon which the realization of these ends depended. Occasionally some lonely figure heroically attempting to scale the speculative heights momentarily drew the attention of the crowd or fascinated for a longer period some more liberated mind; but the law of the plateau was to keep your feet to the ground and to pro-

tect yourself against stumbling in the pursuit of practical ends by refusing to lift your eyes too high above the earth. Besides, those hoping to live successfully on the plateau had consciously or unconsciously to disregard philosophy, since according to philosophy man was not justified in the assumption of personal efficacy nor in the ascription of worth to things which have no status in ultimate being.

Obviously both these errors were implied in the daily pursuits of men, or were supposed to be by the philosophers, which may not be the same thing. Whether of the materialistic or idealistic persuasion, philosophers reduced to phantoms all that seemed most substantial to the senses and the emotions, and made men themselves helpless drops in the cosmic tides. What men touched and saw, what they loved or hated, the defeats they shrank from and the hopes they strained to realize—in short, the whole round of things they busied themselves with and dreamed of achieving, were brought under the one universal curse of illusion. Stu-

dents of Nature, setting out to describe things as they are, arrived at a concept of reality in flat contradiction to the evidence of the senses; and Plato, sounding the deeps of Reason in search of true worth, found the world of sight and sound to be a prison house in which men watch a puppet show with no suspicion of the fraud.

It has been said that "theories which set themselves in opposition to the common sense of mankind may safely be ignored." If the masses disregarded the philosophers, their attitude was justified as an act of self-defense. For the upshot of philosophic thinking was a sweeping demonstration of the futility of life. Great theories, however, are never completely ignored. They seep into life at some point, even the life of common sense. In this instance the students of Nature were able to invent practical devices of various kinds, and men of action were not slow to take advantage of these to modify conditions on the plateau. And while Plato's invitation to regard finite existence as a bad

dream was spurned by men in their practical mood, it was congenial to them in their religious mood, and so eventually came to have a profound influence on thought and action. In this way the duplicity was introduced which we have not yet surmounted. To succeed in life man was expected to be naturalistic, materialistic; to ennoble life he was expected to be supernaturalistic, spiritualistic. During the centuries of loss of nerve which followed the classical period, popularized Platonism dominated the human spirit. Other-worldiness became the regnant philosophy of life. Naturalistic study was all but suppressed, and human hopes were regarded as dependent not upon Nature but upon the will of the almighty Ruler of Nature.

Such, at any rate, was the *logic* of the time; the *practice* of the time was not at all points in agreement. Theology had won the right to dictate what should be believed about the origin and end of the world and man's place in the scheme of things, but this by no means exhausted

the interests of the plateau. In countless ways men set their hopes on earthly ends. With persistence and ingenuity they continued to accumulate practical knowledge, to multiply inventions, to engage in daring exploits involving mastery of the physical environment. Great discoveries and revolutionizing contrivances followed one another, bringing with them changed beliefs about the world and about man. Gradually secular interests were once more openly admitted to be an important concern of man, and little by little natural knowledge replaced theological speculation.

A significant phase of the long struggle was the development of what we now know as Science. And Science had at least two far-reaching consequences. It brought with it a new outlook which may be described something like this: Nature, as an interconnected whole of all that exists in space and time, is the source of whatever happens. Thus the whole of things, physical and mental, may adequately be accounted for by the use of the categories and the

methods employed in the physical sciences. This whole of things is in perpetual process of change due to the operation of inner forces, and all such changes are governed by mechanical uniformities or natural laws which are inviolable.

Once clearly formulated, the scientific world view, and the type of investigation associated with it, proved irresistible. Gaining additional impulse from every new discovery of a law of nature by scientists like Galileo, Kepler, Newton, it swept with incredible rapidity over all civilized lands. Spinoza and Malebranche were fascinated by the sheer intellectual beauty of the mathematical world-picture; Bacon and Descartes saw in the new method the means of controlling natural forces for human ends; but whatever its utility was conceived to be, the scientific point of view became the basic creed of the foremost thinkers everywhere. At first limited to the more material aspects of the world, its spectacular successes there aroused a feverish desire to extend scientific method to all fields. Very soon scientific investigations

were hopefully undertaken in politics, morality, art, and religion. Long before the present century it had become a commonplace of science that everything which enters into man's experience, and all that lies behind his experience as its ground and reason, expresses, in one form or another, some natural law. And many of these laws had been discovered.

The scientific advance was not limited in its effect to transforming man's cultural outlook. An equally profound and even more basic consequence was economic. During many ages the work of the world depended primarily upon human brawn. Science, by tapping heretofore undreamed-of resources of inorganic energy, revolutionized the physical conditions of life. Man ceased to be the most important source of energy, and, at the same time, the available energy was multiplied ten thousandfold. No revolution man has experienced is comparable to this one. Its effects have spread over the surface of the world and penetrated into every occupation of life. A Utopian dreamer, living in prescientific days, could not have foreseen,

even in the wildest flights of his fancy, the multiplication of power which scientific knowledge has made possible. How often we have been told that!

But with accumulation of power goes use of power, and the use made of the power put at man's disposal by science has raised grave doubts in thoughtful minds. Everyone admits that life has been made more efficient. William James is right: "Galileo gave us accurate clocks and accurate artillery practice; the chemists flood us with new medicines and dye-stuffs; Ampère and Faraday have endowed us with the New York subway and with Marconi telegrams." And Julius Stieglitz is right: one of the sciences, chemistry, "permeates the whole life of the nation as a vitalizing, protective and constructive agent very much in the same way as our blood, coursing through our veins and arteries, carries the constructive, defensive and life bringing materials to every organ of the body." And these quotations merely give a hint of the extensive benefits which modern men and women are ready to acknowledge they owe

to science. Yet early in our century, a humane philosopher, speaking of the increasing practical control of nature due to the scientific way of thinking, was not entirely sanguine as he surveyed the situation. "Its rate of increase," he said, "accelerates so that no one can trace the limit; one may even fear that the *being* of man may be crushed by his own powers, that his fixed nature as an organism may not prove adequate to stand the strain of the ever increasingly tremendous functions, almost divine creative functions, which his intellect will more and more enable him to wield. He may drown in his wealth like a child in a bath-tub, who has turned on the water and who cannot turn it off." And since these words were originally written the fear has become general and pronounced. In every country people are asking whether man, with the tools in his hands fashioned for him by science, can be prevented from using them to the destruction of his finer achievements and ultimately of himself. We have gone a long way round to arrive at the ancient antithesis between knowledge of fact and devotion to values.

IV

THE relation between natural laws and human hopes is therefore a vital contemporary question. And a discussion of the problem which shall hold out any promise must begin by defining the two terms of this relationship. Postponing metaphysical considerations until later, natural laws may be taken to mean all those principles or formulas of order which accurate observation has traced or may trace in the ways of things, men, institutions, and societies; and human hopes may be understood to refer to the deeper desires of mankind, whatever those may be. The question then comes to this: Does scientific knowledge make nature subversive of what men want of life, or does it furnish men with a dependable means of realizing what they want?

We must attempt first of all to determine what the chief hopes of mankind are, and this would seem a hopeless problem. There appear

to be as many wants as persons; many more, in fact, since each individual has numerous wants. But the variety attaches to wants in their particularity. Wants also partake of a general character in virtue of which they may be grouped and reduced to certain comprehensive types. Tom may want to be a plumber, Dick a tailor, Harry a professor, but they all want a job. Tom may be engaged to Beth, Dick to Molly, Harry to Jane, but they all intend to marry. The number of more ultimate hopes involved in men's innumerable distinctive desires may in this way be limited.

That has been in effect the position of not a few social idealists, who have felt that if men were assured certain general opportunities their well-being would be provided for. Thomas Jefferson, speaking for the leaders of the American Revolution, designated three: life, liberty, happiness. Prince Kropotkin endorsed the ideas central to the French Revolution. "All have borne fruit," he said, "and will bear more, still finer, as we advance towards those wide hori-

zons opening out before us, where, like some great beacon to point the way, flame the words—*LIBERTY*, *EQUALITY*, and *FRATERNITY*.” Abraham Lincoln, in whose political philosophy the “plain people” were the chief concern of government, regarded the Civil War, on the side of the Union, as “a struggle for maintaining in the world that form and substance of government whose leading object is to elevate the conditions of men; to lift artificial weights from all shoulders; to clear the paths of laudable pursuit for all; to afford all an unfettered start and a fair chance in the race of life.” And if it were necessary to include in this summary the various lists of ultimate hopes devised by philosophers, theologians, religious leaders, sociologists, men of affairs, the quantity and diversity of doctrine would prove embarrassing.

Probably the most comprehensive hopes ever suggested as being ultimately necessary in order that human life be upright, significant, and happy, are those selected by Immanuel Kant. He named them God, Freedom, and

Immortality. But the deep-going wants he intended to safeguard can be better appreciated if we consider why he made just these conceptions so vital, even if his reasoning may appear somewhat curious.

Take the first one—God. Kant was clear in his own mind, and he did his utmost to make clear to the students of his works, that the existence of God is not a matter of demonstrable knowledge. All the classic arguments to prove the existence of God had, in his judgment, failed, and were bound to fail. For they depended upon extending beyond the scope of experience a logic which is valid only within experience. At the same time he made it quite as clear that man must be permitted to have faith in God's existence. Why? Because without this faith the moral life, which something deep in man demands of him, becomes meaningless. His reasoning may be put in this way: The good man, of all men, should be the happy man. And he should be happy in proportion to his goodness. But he cannot cater to his own

happiness, since to be good one must act from a pure sense of duty, without regard to inclination or consequences. Even if he could have his own happiness in view, he does not know what, in the long run or as a whole, it consists in. And granting him this knowledge, he does not have the requisite control of the conditions upon which his happiness depends. It follows from all this that if the good life is to be regarded as a rational life, man must have faith in the existence of a being "able to connect happiness and morality in exact harmony with each other." In other words, we may take Kant to be contending that in a rational world *the good man must not be defeated, either in his goodness or in his life.*

His position on freedom of the will is of the same character. In the domain of demonstrable knowledge freedom is unthinkable. Science and freedom of any kind are strictly incompatible. As a creature of space and time man is under the dominion of causality; all his acts are the effects of causes which are themselves the

effects of previous causes, and so on without end. Nevertheless man must believe in the autonomy of his will. Take this faith from him and the moral life is once more rendered meaningless. For the moral man is under command to do as he *ought*; which is verbiage unless he *can*. Alternatives of conduct must be actual possibilities, not merely seem such, or the very basis of morality is gone. Kant proceeds to show how this can be. Man belongs in two spheres—in a world of appearances and in a world of reality. As an organism in the phenomenal world, i. e., in the world disclosed to the senses, he can have no hope of freedom which is not a phantom. But man has a conscience. And this lifts him out of the sense world. As a conscience he inhabits a noumenal, i. e., a supersensible world, and is really free. Into this metaphysical issue we need not at present enter. We need only make clear to ourselves that in this second instance Kant is arguing that in a rational world *freedom of will of some sort must be a fact*.

And now why immortality? Because the full moral potentialities of man are not realizable in finite time. Kant states himself in this form: "Perfect harmony of the will with the moral law is *holiness*, a perfection of which no rational being existing in the world of sense is capable at any moment of his life. Yet holiness is demanded and it can be found only in an infinite progress towards perfect harmony with the moral law. Now, this infinite progress is possible only if we presuppose that the existence of a rational being is prolonged to infinity, and that he retains his personality for all time. Thus immortality is inseparably bound up with the moral law."

Disregarding the concept of moral obligation peculiar to Kant and the nature of the argument he uses to make it inseparable from faith in immortality, there remains the insistence that in a rational world *the highest human potentialities must be assured a genuine chance*.

These, as it seems to me, are the profoundest, most vital general hopes of mankind. Kant pre-

sented them under the symbols God, Freedom, and Immortality, but freed from specific theoretical associations and from accidents of language we may take them to be these three:

That the good man be the fortunate man.

That freedom of will be a reality.

That human potentialities have a fair chance.

The various problems connected with the multiform individual expression of these hopes, as well as all questions of relative importance (when it comes to these individual expressions) and proper interrelations, must here be forgone. We have rather to determine, if we can, the bearing of natural laws on those general opportunities which, if assured, promise to make possible the richest, fullest, and noblest human life.

V

THE hope that the good man be not defeated, either in his goodness or in his life, has had a long history. No hope is more deep-going. According to many people it is not indeed a hope to worry about, since the Ruler of Nature has made adequate provision that the good life shall be the triumphant life. Eliphaz, giving counsel to Job, was a spokesman for this view:

Bethink thee now; who that was guiltless hath perished,
 And where have the upright been cut off?
 As I have seen,—they that plough iniquity,
 And that sow wickedness, reap the same.
 By the breath of God they perish,
 And by the blasts of his anger they are consumed.

There is, however, another side, eloquently expressed in a fragment which comes down from Euripides:

Doth some one say that there be gods above?
 There are not; no there are not. Let no fool,
 Led by the old false fable, thus deceive you.
 Look at the facts themselves, yielding my words
 No undue credence: for I say that kings
 Kill, rob, break oaths, lay cities waste by fraud,
 And doing thus are happier than those
 Who live calm pious lives day after day.
 How many little states that serve the gods
 Are subject to the godless but more strong,
 Made slaves by might of a superior army!

Euripides undoubtedly strikes the deeper human note. When men are honest with themselves most of them make what Emerson called "the immense concession that the bad are successful." Their logic may be at fault, as he contended, or they may have the wrong conception of success; whatever the reason few men really believe, as he thought they should, that "a perfect equity adjusts its balance in all parts of life," or that "every secret is told, every crime punished, every virtue rewarded, every wrong redressed, in silence and certainty." Life teaches them otherwise. It is the glory of man that in the face of this concession he will

not admit moral defeat. The fact, however, that vast numbers of men and women are driven to look for moral victory, if not for the satisfying life, in some supersensible form shows clearly enough what they believe to be the hazards of existence on earth. The variety and popularity of compensatory faiths and philosophies, some of them noble and beautiful in conception, but none too bizarre or fantastic to want a troop of enthusiasts, declare as plainly as anything can the general conviction that if in this life only we have hope of satisfaction we are of all creatures the most miserable.

No thinker ever came to this problem with greater resolution or deeper purpose than the philosopher to whom we have already listened. Immanuel Kant proposed once for all to free the good man from every danger of defeat. And he believed himself able to do this by logically validating a concept of goodness which in its very nature is fortified against being affected by ups and downs in the world of affairs. His idea was extremely simple. The man whose

concept of morality demands that he act from a sense of pure duty, who acts not because of any consequences his act may have but solely in order that he may do as he ought, cannot possibly be morally defeated. Kant had his own way of stating the case, but he thought that he was speaking for a deep conviction of the common man, as he was. The common man believes that goodness is a matter of inner disposition, and morality a matter of duty. If he has given some thought to the subject he may argue, as Kant did, that certain privileges—wealth, social position, etc.—are open only to the few, while goodness is open to all. Not every one can be successful, famous, influential, happy, or well off, since these results depend upon natural gifts or fortunate circumstances which are beyond a person's control. But every one can be good. In the matter of goodness all temperaments, talents, circumstances, are neutral, and all people equal. To be good you need only really want to be so. And you can really want to be so whether you are rich or poor,

educated or ignorant, gifted or stupid, a genius or a fool. For goodness is at bottom just one thing—a fervent, active desire to be good.

It must be conceded that under this theory the good man cannot be defeated. His character is an impregnable fortress. Natural law, no less than social law, is powerless to affect it. But there are grave objections to this way of saving the man of character from defeat. Granting for the moment that he cannot be defeated in his *goodness*, he *can* be defeated in his *life*—unless, of course, his life consists in being thus abstractly good. Normal men and women are not so limited in their wants. They have various desires, and the success or failure of their lives is bound up with the fortunes of these desires. A morality which concentrates its attention upon “the monitor in the human breast,” which turns its back upon the material needs of men and upon the wider horizons of their interests and activities, does nothing and can do nothing to safeguard them against defeat in their lives. If such morality is a citadel

which cannot be taken, neither does any force from thence sally forth to battle for the conditions upon which human happiness depends. Social movements which have improved these conditions—the anti-slavery movement, the labor movement, etc.—have recognized the incompetence of exotic morality and have found it necessary to repudiate its authority.

Nor can we grant for more than a moment that this type of morality protects the good man from defeat even in his goodness. The protection is purely theoretical. Moral decisions are inevitably made in concrete situations where alternative goods, conflicting desires, diverging consequences are at stake. The goodness of the moral man must perforce realize itself in and through this concrete tangle. Somehow he must find his way to a choice, and his preferences must necessarily take specific form, no matter how abstract the standard which he intends to follow. Refusing to criticize his desires, or spurning to find his way by forecasting and balancing the alternatives of con-

duct open to him, will not enable him to escape acting concretely or taking sides. He merely surrenders his moral intention to the dictation of his immediate feelings or he blindly follows habits engendered in him by social pressure. The more naïve his moral faith, the more readily will he fall prey to moral exploitation. In a social crisis he becomes a mere pawn moved by men who play a game into which considerations of right and wrong are not permitted to enter. The moral purpose which should be a vital, intelligent, rejuvenating force in life becomes a blind infatuation with respectability or is perpetually swooning in the arms of its own righteousness.

In view of our obtuseness when habitual behavior is concerned, it is desirable to select a somewhat conspicuous example. Last May, during the textile strike in Shanghai, the British police shot down unarmed students and laborers. A wave of national feeling swept the Chinese people. According to Paul Blanshard, writing in *The Christian Century*, this crisis

threw "the old and the new type of missionaries into merciless relief." The Shanghai shooting, as he says, "was the symptom and symbol of Chinese humiliation." As such "it constituted a challenge to every foreign missionary." Were they foreigners first and Christians second, or were they genuinely dedicated to the higher life of China?

In response to this challenge the old and the new type of missionaries took opposite sides. The older type "hemmed and hawed and read the pro-British newspapers and talked privately in whispers against the student movement." Mr. Blanshard reports that "Shanghai was full of such missionaries during the strike. They poured down from the interior in full flight from local demonstrations of Chinese hostility. They spoke of agitators and irresponsible youth. They prevented the missionary associations from making any clear pronouncement in behalf of Chinese rights in those bitter days when the foreign press was presenting a distorted picture of the struggle. A meeting

called for the purpose of taking action was broken up in five minutes."

Were these good people not interested in justice? They were; certainly most of them were. Why did they fail to give evidence of it—not necessarily by siding with the strikers, but by at least insisting upon an examination into the facts?

A complete answer to this question would not be simple, but Mr. Blanshard has hit upon the chief reason for their failure when he says: "There is a fundamental distinction between the missionaries who have sided with imperialism in this crisis and the missionaries who have opposed it. The older missionaries do not know what imperialism is. They know a word in a dictionary, but they do not know the power of economic exploitation to twist character. . . . They do not carry their splendid personal moral standards into the realm of economic life because they consider economic organization somewhat irrelevant to the main part of the Christian gospel." That is to say,

these missionaries were very good people. They lived according to a "splendid personal moral standard." But their goodness was aloof from the rough and tumble of affairs in which they nevertheless became involved. They were devoted to justice. But it was abstract, not social, justice; or, rather, since there is no such thing as abstract justice, they were devoted to their devotion. So it came about quite naturally and inevitably that in a conflict between Chinese labor and foreign capital—when right and justice were concretely at issue—they unwittingly took sides against their better aspirations.

In older, simpler days the division of life into behavioristic strata in one level of which a person was expected to achieve success, in another perfect his virtue, in a third save his soul, was not so serious a matter as today. No one type of interest was in a position to dictate the terms of life. This is, however, no longer the case. Contemporary life takes its character from its preoccupation with the material

interests. The ideas, forces, and institutions through which these material interests operate dominate the activities of men and women to such an extent that they condition conduct as a whole. An occasional person may be able to sequester himself from the common walks of men, and may find in freedom from secular cares, in the sweets of meditation, and in the tranquillity of spirit possible to the detached observer the highest attainment of character and the greatest joy in living. But the vast majority cannot escape. For the great mass of men, high and low, character must be brought into reciprocal coöperation with the daily occupational activities or have no vital existence, and the life that shall yield the highest satisfaction cannot be made utterly independent of the workaday demands.

Now when morality becomes acclimated to the full rigors of daily life, goodness takes on a new character and the relation between the good man and natural laws is made intimate and inevitable. Character is no longer blind loyalty

to an abstract principle or to a set of fixed rules. It is devotion, in concrete and intelligent form, to the human venture projected on this planet. And the consummation of this devotion in deeds is dependent upon accurate information bearing on uniformities of behavior in persons and things. Justice, fair-dealing, decency, good will, regard for truth and beauty—these and all other ideals are interwoven with material processes; they cannot be formulated, not to say realized, without the inclusion of facts of order discoverable in the inorganic world, the human organism, and organized society. Anthropology, economics, social psychology become indispensable to moral insight, and geology, physics, chemistry, engineering become servants which may assist man in the consummation of his moral purpose.

VI

NONE of the great hopes of mankind has been more discussed than freedom of the will. Its reality has been vigorously attacked and stoutly defended from the beginning of orderly thought on the subject, until in some quarters the opinion prevails, as William James put it, "that the juice has ages ago been pressed out of the free-will controversy, and that no new champion can do more than warm up stale arguments which every one has heard." Yet no topic is so sure to arouse the interest of a college class or a group of young people anywhere. The issue is evidently deemed to be vital by human beings in their more vigorous years. In any case it is unavoidable in the present discussion. Men insist upon the actuality of choice, by which they mean that alternatives of conduct must be real possibilities, either of which may be, neither of which must be, the outcome of deliberation. Is this compatible with the

theory of natural laws? Is the believer in natural laws not forced to conclude that all decisions and actions, together with the processes of thought out of which decisions and actions develop, are strictly determined by the causal nexus in which they are inextricably set? The contradiction seems obvious and flagrant.

Still holding our thought to the common-sense level let us endeavor to determine whether this is the necessary conclusion or a matter of definition. Perhaps a genuine freedom of will is not only compatible with, but actually dependent upon, the discovered uniformities called natural laws.

We will assume a person to be sick, and will refer him to the familiar dilemma: "If it is fated that you die, you will die whether you call a doctor or not; if it is fated that you get well, you will get well whether you call a doctor or not. But one or the other must be fated. Therefore you will die or recover regardless of what you do." On this basis freedom of will would be an empty phrase, for there is nothing

the sick man or anyone else can do to change the course of events one way or the other. The freedom of will vital to a sick man is one which can assist in his recovery, and in the present case this possibility is ruled out.

Let us now admit this possibility to exist. It is clear that in that case a real freedom of will exists also. Renouvier tells the story of Dr. Livingstone's attempt to dissuade a negro conjuror from his fetichistic ways of invoking rain. "You see," he said, "that, after all your operations, sometimes it rains and sometimes it does not, exactly as when you have not operated at all." "But," replied the conjuror, "it is just the same with you doctors; you give your remedies, and sometimes the patient gets well and sometimes he dies, just as when you do nothing at all." To that the pious missionary replied: "The doctor does his duty, after which God performs the cure if it pleases Him." "Well," rejoined the savage, "it is just so with me. I do what is necessary to procure rain, after which God sends it or withholds it ac-

according to His pleasure." The difference between this and the first example is that here, while much is still beyond control, one can (to use the conjuror's words) do "what is necessary" to bring about the desired result. The result will not come willy-nilly. And if one can do that much one enjoys a very positive freedom of will.

The story teaches more. It teaches that freedom of will, taken in the positive and concrete sense, is dependent upon natural laws. As a debater the savage is easily a match for the missionary. But he is at a disadvantage practically, and a test of their comparative ability to produce results would have disclosed this. The number of successes, as contrasted with the number of failures, would have shown the doctor's way of doing "what is necessary" to be the more effective of the two. Nor is the reason for this superior effectiveness difficult to determine. The doctor depended upon known physiological and chemical uniformities, while the conjuror had nothing analogous to rely upon.

What this case merely suggests, because of the

presence of confusing factors, is amply and clearly shown by the history of modern medicine; more graphically by such spectacular achievements as the insulin treatment for diabetes, or the eradication of yellow fever through the discovery of its connection with the life history of *Stegomyia*, but no less certainly by the long list of experimental triumphs which have brought many diseases under control. As medical science has been able to ascertain how certain things go together in nature, it has gained for the sick greater freedom to exercise the will to get well. Where this information is yet wanting, as in the case of cancer, man is still at the mercy of the disease and, in that respect, utterly without the only freedom of will that counts. Every advance in sanitation, every improvement in clinical, surgical, or hospital technique, every social device which has brought the best medical attention more nearly within the reach of every one, whatever his economic status, has contributed to man's ability to will himself free from disease.

But man is fettered by much besides disease. By nothing is a man more bound than by the feelings which steal a march on his mind or play havoc with his plan of life. The reality of freedom here again hinges upon accurate knowledge of relevant facts and the control of conditions made possible thereby. According to an authority, Frankwood E. Williams, we are just coming into possession of a technique which will enable men to experience greater freedom from the tyranny of emotions than has heretofore been possible. "While much has been written," he says, "in two thousand or more years about man's emotions (poetry, philosophy, romance), accurate data in regard to man's emotions have only begun to be gathered in the past thirty years." But since such data are becoming available we are learning that the emotional handicaps of adult life "represent almost invariably, if not always, the unsolved problems or the partially solved or badly solved problems of childhood." And it can be said, he continues, "that these emotional problems are no

longer a matter of complete mystery, that they are in many phases understandable and, what is more, manageable." The article from which these quotations are taken, called "The Mechanism of Human Behavior," presents a way of dealing with the inhibitions caused by feelings of inferiority, fears of various sorts, the sense of shame and guilt, sex problems, and the like. It shows beyond question that the reduction to psychological laws of these seemingly chaotic emotional disturbances has made it possible to win new liberty of action for men who have suffered from one of the oldest, most baffling, and often tragic forms of human bondage.

Deeply significant as these pathological inhibitions are, they represent only one aspect of a larger problem. Even so-called normal wills are thwarted in all sorts of ways by emotional forces. What is it that determines the attitude of the vast majority of people on the most important issues of life? Is it intelligent understanding or emotional predisposition? The

plain fact is that common social practice seeks deliberately to propagate emotional epidemics as the surest safeguard of a worthy social life. The emotional scourges which sweep over the human spirit, warping the senses and stupefying the mind, are not lawless phenomena. Myths which arouse men to frenzy in war time, prejudices which induce one class to impute low motives to other classes, hatreds built upon racial antipathy, and other group emotions, show a striking family resemblance whether they occur in Rome, Berlin, Paris, London, or New York; in the Occident or Orient; in antiquity or today. If the sources of public information—newspapers, schools, churches—instead of doing what they can to spread emotional contagion, functioned to undermine the natural gullibility of mortals and to stimulate the practice of weighing conclusions in terms of evidence, the gain in human freedom would be enormous.

There is no more important social problem than this pathology of normal minds. For the

person who is compelled by inner forces to respond to the nearest motive or who is swept off his feet by the mere pressure of the group, is to that extent a slave, while the person who can stop to reflect, who can make the attempt to permit conflicting facts to speak to him, possesses, in a very important and unfortunately rare sense, freedom to exercise his will. The deeper current of his desires is brought to bear on the impulse of the moment, and the demand made upon him by the immediate environment, by conventions and customs, is placed in social perspective. Above all he can act under the guidance of ideas, intelligently.

These two examples, disease and emotions, must be left to bear the burden of the argument, but the principle holds in all fields, and tempting illustrations, almost without number, might be adduced. The augmentation of freedom resulting from the discoveries of science in the realm of matter is so patent that it requires no demonstration. Nor does it really need to be shown that progress in the arts involves order

and control of a profound and delicate kind. To some people at least it is equally clear that the spiritual interests of mankind are subject to like conditions. Everywhere volitional freedom, to be actual, must be able to find and make use of regularities of behavior in people and in things. Thus freedom of will need not mean (as it has been taken to mean) freedom to act without reference to conditions. It may mean, indeed it may better mean, something very different. It may mean, negatively, liberation from the necessity of accepting what comes; and, positively, a genuine opportunity to take advantage of conditions which make possible the attainment of what one deeply desires.

There are many ways in which this type of freedom is now blocked or interfered with, and to this phase of the question we must presently give some attention. But it cannot be the objective of organized society to free its members from dependence upon any and all conditions—if such a concept has any meaning.

A better ideal has been suggested by Clerk Maxwell: The "abandonment of wilfulness without extinction of will, but rather by a great development of will; whereby, instead of being consciously free and really in subjection to an unknown law, it becomes consciously active by law, and really free from interference of unrecognized law." Organized society can aim to make more and more secure for every individual the privilege of utilizing all available knowledge to make his life as rich and full as his capacities will allow. Every step in this direction is an enlargement of active, as contrasted with theoretical, freedom of will. It is freedom of will in the specific and positive sense. And every such step involves dependence upon what we have defined as natural laws.

VII

JUDGED by conventional records every human being begins with a moment of birth. It is recognized that each individual had a nine months' history before that moment of birth, but it cannot be said that the significance of this history is appreciated. During this pre-natal period the fate of a human destiny is in the balance. Potentialities of various kinds are being given or denied opportunity for growth. The broad lines of possible development after birth are being laid down. If men are to have a fair chance to realize their possibilities this important epoch in their early history deserves attention.

Yet what has been the common attitude? The simplicity which has looked upon the baby as a gift of God and upon mother instinct as semi-divine has left the development of the given capacities to be determined, generation after generation, by chance circumstances. Thou-

sands of individuals have thus been handicapped in unnecessary ways throughout life. Experimental observation, on the other hand, has done at least something to bring prenatal development under control. How far such control may yet be able to go there is no way of telling; but greater knowledge will undoubtedly make possible a fuller realization of the best that can be done with innate material and win for the unborn a still more favorable condition of growth.

This represents only the beginning. Scientific genetics may in time throw light back far beyond the period of gestation. How far the laws of inheritance which have been established for plants and animals apply to man, especially to his more distinctive traits, is still far from clear. A considerable body of information is available, waiting to be made more precise and in some cases more authentic. When this is done, our knowledge of genetics will indicate possibilities of improvement in the physical natures of men, perhaps even in the qualities of

manhood, or in any case will suggest ways of eradicating obvious defects.

Unfortunately the very idea of applied genetics, or eugenics, is obnoxious to many persons. Few of them would go so far as to agree with the writer in a Roman Catholic newspaper to whom Dean Inge recently referred, that "strictly speaking, we have no duties to posterity, for posterity does not exist"; but they think with Clarence Darrow that eugenics means tinkering with the human race, and they have a healthy suspicion of all tinkering with the human race. They prefer, as he prefers, "leaving the matter of future generations to the system of pot luck which exists in nature." Much of this opposition is due to a false impression created by writers who have lapped up the surface facts of eugenics. The irresponsible pronouncements of these much-heralded propagandists deserve no consideration, but they should not blind us to the deeper facts which geneticists are accumulating bearing on the danger of racial degeneracy and the oppor-

tunity of racial improvement. Tentative and largely negative as eugenic conclusions are at present forced to be, they represent one of the ways in which scientific observation promises men a better chance to reach their full stature as physical, mental, and moral beings.

Once born, experimental knowledge is again on hand to increase the baby's prospect of remaining alive and in health. A baby that is allowed to die, when with proper attention it might live, or to struggle through a series of diseases because they are regarded as the inescapable lot of all normal children, has, in the one case, obviously failed to realize its potentialities, and in the other, been deprived of the right of every child brought into the world, the right to be protected from everything that weakens the physical and mental endowment which chanced to fall to its lot. The careful work done in the last decade or two on problems connected with the feeding and care of children, as a result of which tested knowledge has in thousands of cases been sub-

stituted for well-meaning guesses, has added incalculably to the chances of those affected to live normally healthy and reasonably satisfying lives.

The Children's Bureau of the United States Department of Labor has recently completed the first careful, extended investigation of why babies die. Dr. Robert M. Woodbury studied the deaths among 23,000 children, rich and poor, in eight widely scattered cities. His report, *Causal Factors in Infant Mortality*, calls attention to important regularities of relationship. For example: The mortality among the exclusively artificially fed babies averaged between three and four times that among the exclusively breast fed; when the father's annual income was \$450 or less the number of deaths was almost three times as high as when it was \$1250 or more; the death rate for infants whose mothers had worked away from home during pregnancy was 176.1 per thousand, as compared with 114.6 for those whose mothers had worked at home, and with 98 for those whose mothers had not been gainfully employed. There can be no

doubt that the possession of such information, not only for babyhood but for the whole period of childhood, has a direct bearing on the possibility of approximating the maximum of attainable health and the achievements dependent upon health.

The story is repeated in the realm of mind. In spite of endless discussions in philosophy, psychology, and educational theory, native mental capacity has been left subject to even more haphazard conditions than physical capacity. Within a decade and a half a great change has come. Scientific conceptions of mental processes and mental disorders have gained ground, and scientific methods of investigation have been devised to deal with problems in this all-important field. Unquestionably the change has been accompanied by quackery, fraud, and a tendency to overgeneralize; but anyone who distinguishes between these aberrations and the solid achievement in ideas and methods, will be impressed by this new approach to the resources of mind.

The problem of realizing mental capacity has various angles, growing out of the existence of superior, average, and inferior minds, and out of the effect produced on each type by a particular kind of environment. Ultimately of course the problem involves turning to good account all degrees of talent, but since the pinch of unfavorable conditions is most severely felt by the superior and abnormal, rather than by the average type, it is there that remedy is first called for. With respect to superior minds we can scarcely claim to have reached the threshold of a hopeful solution, but with respect to abnormal minds we have passed well beyond it. The Mental Hygiene movement, started in 1908 by Clifford W. Beers, himself at one time a sufferer from mental disorder, has become one of the most important social agencies of our country. Through its influence the common fatalistic attitude towards mental disorder or mental disability is slowly being replaced by the recognition that they belong in the general category of disease, and, if promptly and properly treated,

may often be cured or prevented. Such books as *Social Aspects of Mental Hygiene*, published by the Yale University Press, give one a sense of the enormous saving in human potentialities made possible by this new method of dealing with mental abnormalities. And these accomplishments, great as they have been, convey only a hint of the nation-wide constructive plans undertaken for the future by the National Committee for Mental Hygiene, plans aiming not merely at the cure and prevention of mental disorders, but at the maximum of well-being and happiness attainable through the informed utilization of the given mental and nervous equipment. It is safe to predict that public education will in coming years have a much closer alliance with this movement than is at present deemed feasible. The concept of education will be greatly expanded, much to the advantage of capacities now neglected.

And how vast and multitudinous the chorus becomes as we step into the world of affairs! Emerson was not primarily interested in ma-

terial achievements, but even he broke into exultation at the thought of the augmentation of man's powers in this direction. Almost a century ago he exclaimed: "Man no longer waits for favoring gales, but by means of steam, he realizes the fable of Æolus's bag, and carries the two and thirty winds in the boiler of his boat. To diminish friction, he paves the road with iron bars, and, mounting a coach with a ship-load of men, animals, and merchandise behind him, he darts through the country from town to town, like an eagle or a swallow through the air. By the aggregate of these aids, how is the face of the world changed from the era of Noah to that of Napoleon!" What would he say could he witness "the aggregate of these aids" increased to their present proportions! The procession of automobiles which now hurries by his door would intrude upon every hour of his solitude, the rumble of huge trucks would divert his meditations, and the great roaring birds that come to swoop above the tall pines he intended as guards to his retreat would

challenge his muse to equal their daring! Men are more and more questioning the final beneficence of the mechanization of life, and well they may. But no one can question the stupendous expansion of human capacity which machinery represents.

Here then are a few episodes in the romantic story of the liberation of man's powers. The plot is always the same. We have had repeated occasion to emphasize it. It is the discovery and intelligent use of the way things hang together in nature. From the remote past one of man's deepest urges has been to invest his gifts and talents for the highest realizable return in earthly happiness. Belief in Providence has not furthered this hope. Parental instinct has failed as a guide. Human sympathy could only stand and weep. But the ingenious use of discovered uniformities in the world of things and of men has released and enlarged human powers.

VIII

WE must now knit the argument a little closer. The burden of the discussion so far has been that natural laws are opportunities which man may employ to realize his hopes. Does this take us to the bottom of the question? Not quite to the bottom. For one thing, we cannot altogether avoid leaving the common-sense level. We must take at least a glance at the claim that natural laws are, so to speak, the dynamic habits of the universe by means of which the whole of things moves on in its undeviating way despite man's wishes or desires. That there is such a whole of things, thus moving on, is one of those immortal conceptions which finds reincarnation in every new outlook on the world, and so remains alive though successive bodies of knowledge die. The sturdy old Roman, Lucretius, was repeating an ancient tale when he sang that things

. . . . arise and fail and fall
From flowers to stars—the great things and the
small;
Whilst the great Sum of all things rests the same,
The all-creating, all-devouring All.

An ancient tale, but ever new. Men are prone to believe today as they did yesterday and of old that there is much more “in the minds of the events” (to use the recent words of Viscount Grey) “than in the minds of the chief actors.” And we have already observed how thinkers otherwise at odds have united in the attempt to reduce the experienced plurality and diversity of things to one dominating type of existence.

A heron, not being a thinker, nor aspiring to be one, may go about his business in a matter of fact way, realizing his simple, dimly-perceived ends oblivious of the great world and its ways. A primitive or primitive-minded man may do the same. But one who has been made aware of his place in a vast universe, ruled, as he has been taught, by law which is the model of universality and inevitableness, can scarcely resist

thinking of himself as at the mercy of the power that "launched the rolling planets into space." He will tend to attribute everything that happens to a something called Nature, and to regard all incidents or episodes in the history of events as the inevitable temporal explication of this eternal potency. He will incline to the opinion of Herman Melville: "It's too late to make any improvement now. The universe is finished; the copestone is on, and the chips were carted off a million years ago." This creates an issue we cannot entirely avoid.

The ease with which we are imposed upon by language makes it desirable, first of all, that we keep in mind the perfect neutrality of any whole of things towards the drama enacted on the earth. "Love Nature?" cries Edwin E. Slosson in one of the most widely distributed of contemporary books. "Never!" And why not? Because "she is our treacherous and unsleeping foe, ever to be feared and watched and circumvented, for at any moment and in spite of all our vigilance she may wipe out the human race

by famine, pestilence or earthquake and within a few centuries obliterate every trace of his achievement." But Mr. Slosson is writing as a journalist, not as a scientist, when he pictures Nature, bent on destruction, sneaking up, as it were, on unsuspecting humanity. Let us grant what he maintains—that the human race not only may, but ultimately will, be wiped out, together with all human achievements. Let us say with him: "The wild beasts that man has kept at bay for a few centuries will in the end invade his palaces; the moss will envelop his walls and the lichen disrupt them. The clam may survive man by as many millennia as it preceded him. In the ultimate devolution of the world animal life will disappear before vegetable, the higher plants will be killed off before the lower, and finally the three kingdoms will be reduced to one, the mineral." And let us agree to believe that "chaos is the 'natural' state of the universe," "anarchy the natural state of the human race," and that both tend naturally to sink back into the chaos out of

which they arose. Still we have no ground for calling Nature "our treacherous and unsleeping foe." To do so is to think of Nature after the analogy of a human being who, if he were to be responsible for such destruction, would testify to the maliciousness and cruelty of his nature. The metaphor (so long as we recognize it to be a metaphor) may well symbolize those inescapable facts of life which add a touch of somberness to the minds of those who think; but no fact or sum of facts, however devastating to human hopes, is evidence of malice in Nature.

If the course of Nature may not be accused, in any proper sense, of being man's enemy, neither may it be credited, in any proper sense, with being man's friend. Clarence Darrow has for the moment turned poet when he writes in this vein: "For after all, men and animals are much alike, and nature loves them both and loves them all, and sends them forth to drive the loneliness from off the earth, and takes them back into her loving breast to sleep." To be sure, material forces are put to a multitude of

profitable uses by man. And human desires, from the most physical to the most spiritual (using familiar terms) are dependent upon natural processes. Even Mr. Slosson's project of circumventing Nature must rely upon the Nature it would circumvent. Nevertheless to ascribe kindness to the world order is a figure of speech. Nature, in many aspects, may be of support and benefit to man without giving him the slightest reason for attributing the bounties received to an interested intention. Speaking with a sense of responsibility for the meaning of words, we are forced to admit that we have no evidence whatsoever of the existence in the material world of any regard for human affairs.

Now assuming it to be a fact that the world at large is not intent either upon advancing or thwarting human desires, it still remains an open question whether there is a tendency in things as a whole which determines the destiny of the whole and every part of it. If such be the case, then the whole of things does after all move on, though blindly, in its undeviating way

despite man's wishes or desires. And is this not exactly the purport of science as commonly understood? A vast, interlocked, mechanical whole, impelled by irresistible mechanical forces that act with undeviating uniformity, to which every creature and every event, every process and every particle are absolutely subject—does not the world, as viewed by exact science, come to just that? Since it comes to just that, and since exact science is taken to be supreme in the world of knowledge, how fatuous the notion that natural laws are opportunities which man may use to realize his hopes—as if natural laws were subject to man, rather than he to them!

There are two or three ideas relevant to this question which may at least be alluded to in this brief study. We may ask, Who knows that what we call Nature is the sort of Whole generally supposed, a Whole which is something other than the active togetherness of elements, something superior to the totality of its parts and their relations? No such unity has been *demonstrated* to characterize the world as a

whole, if indeed it has been made comprehensible. And the unities we are acquainted with—illustrated in nations, cities, clubs, organic and inorganic bodies—are of a type in which the individual elements have an identity, a function, and a radius of effective influence truly their own, while in their mutual interdependence and interaction they *constitute* the whole without which they could not exist. May not a unity of the same nature be assigned to the universe, a unity which *occurs* because its components constantly come into relation and interaction with each other, rather than a unity which *pre-exists* and produces the relations and interactions? Such a whole of things it would be an error to picture as forging ahead over men's hopes and fears, not to be deviated at any point by anything men can do. In such a universe human hopes and fears are as real as anything else and may logically be conceived to be instrumental in determining to some extent the character of the whole; for they may be effective in deciding what some of the relations and interactions of

life shall be, and so, to some extent, what kind of a world men shall live in. Or to put it in another way: instead of accepting, as a veritable picture of ultimate reality, the mechanical whole of things arrived at by physical science through its method of abstraction, and then denying or blinking the significance of man's hopes and fears and efforts—instead of proceeding in this way, we may take as something undeniably real the observable effectiveness of these hopes and fears and efforts, and attempt to read the character of the whole of things with due regard to this experienced fact.

This does not, it is true, entirely meet the difficulty. Natural laws remain to control events if a determining Whole of things does not. For in spite of much instruction to the contrary, and some striking developments in science which should have made us sceptical, we still think of these laws as compelling forces whose manner of operation scientists have been clever enough to trace and record, but against whose ceaseless activity men are powerless.

We may perhaps have advanced beyond H. T. Buckle, who argued that in a given state of society a certain number of people must commit suicide because of a "large social law," the power of which "is so irresistible that neither the love of life, nor the fear of another world, can avail anything towards even checking its operation." In the case of social laws we have learned that the "law" is *descriptive*, not *proscriptive*; that a change in social conditions will result in changed social laws. Yet in principle we are in agreement with Mr. Buckle, and have still to appreciate the conception of natural laws according to which they are not forces compelling things to behave in specific ways, but interpretations of the way specific things behave, arrived at by ingeniously relating particular occurrences to other occurrences not obviously of the same type. It would be foolish and cheap to attempt to belittle their significance, either as human accomplishments or aspects of experienced existence. They are the glory of thinking and they represent insight

into reality. But it does not follow that we regard them as we would decrees of fate "that men must needs abide." It rather follows that we respect them for what they are; generalizations of observed regularities in natural phenomena which make possible predictions of what will happen under set conditions. Which is another way of saying that they are instrumentalities enabling men to further their desires.

It may still be contended that man's range of influence is very limited and that changes are constantly taking place on earth and beyond it which may sooner or later frustrate all his efforts. This must be conceded. When we remember the animal dynasties that have gone to their doom, or consider the destiny of suns and moons and stars, we cannot engage upon the so-called "mastery of nature" with the confidence and buoyancy of those who were younger in knowledge. There is much disclosed by science which "shadows forth," as some one has said, "the heartless voids and immensities of the universe, and thus stabs us from be-

hind with the thought of annihilation." Still, whether the run of the human drama is to be long or short, it promises to be long enough before the curtain falls, if fall it must, for the decrease of suffering and the increase of happiness; long enough to win great numbers of men from acquisitive scheming to creative endeavor, and to make beauty far more pervasive of life than it is. And that is what matters.

IX

SO we draw to the conclusion. The uniformities discoverable in nature are amenable to human demands. If man so wills he may employ them to further the most appealing, most admirable ends of individual and social life. Principles of regularity in phenomena, or formulas of the orderly togetherness of quantities and qualities, simultaneous and successive, based upon careful observation and experiment, may—as the earlier scientists dreamed—be made a solid foundation for the Kingdom of Man.

May be—but not necessarily *will* be. For the mere accumulation of scientific data and the perfection of scientific technique do not of themselves enhance the general welfare. Everything depends upon the application. And if the development of science, physical and social, offers an exceptional opportunity to enrich and dignify life, to make it more beautiful and joy-

ous, it offers an opportunity, perhaps even more exceptional, to impoverish and degrade life, to make it more ugly and miserable. The question naturally arises, to which use of the opportunity does contemporary life incline?

No student of the times will consider this an obscure problem. It is too evident that the present use made of the information gained about the world is not directed towards securing the most livable life all around. To a very large extent knowledge is permitted just to pile up. And where some sort of intelligent use is made of it, those responsible for the direction of this use are, as a rule, intent upon furthering a very circumscribed set of interests. For the sake of these they commandeer all available data and every improvement in technique. Foremost in this respect are the leaders in the business world. We recall that from the beginning far-sighted leaders on the common-sense plateau have taken advantage of any speculative result which could be turned to practical account. The knowledge that is power thus

passed into their hands, and they, the men who "do things," rather than the men who think about the best thing to do, became the chief determiners of conditions and events. As life grew in complexity the class occupied with the economic aspects of life grew in importance. The rise of this class into prominence, while dramatically sudden in recent times, goes back to two historical events—the unprecedented commercial expansion beginning with the sixteenth century and the still more momentous industrial revolution which followed a century and a half later. As an effect of these stupendous changes mechanical invention became the servant of business enterprise. Gradually there passed under the same control the privilege of exploiting the fabulous resources made available by science, and more and more men of science have been stimulated to work on problems connected with the ventures of business.

In harmony with this tendency a new type of leader has pushed his way into the position of power formerly claimed by priest, soldier, and

statesman. The head of the Civic Development Department of the United States Chamber of Commerce (who would not wish to say anything "radical") was not boasting but stating a simple fact when he called this "the business man's age," and added: "Capitalism is today triumphant and the American business man, as its conspicuous exponent, occupies a position of leadership which the business man has never held before." It is interesting to note that this is just what a less conservative gentleman, James Harvey Robinson, has contended, giving in addition a few details to indicate what this "position of leadership" implies. "Business men," he wrote, "whether conspicuous in manufacture, trade, or finance, are the leading figures of the age. They exercise a dominant influence in domestic and foreign policy; they subsidize our education and exert an unmistakable control over it. . . . Most religious institutions make easy terms with business, and, far from interfering with it or its teachings, on the whole cordially support it." And who needs

to be convinced of the enormous influence exerted by our captains of industry through the daily and periodical press?

The dominance of contemporary life by business is not appreciated if we have in mind only those directly engaged in buying and selling or if we concentrate our attention, as we generally do, upon the conspicuous personages among them. The significant fact is that preoccupation with the interests of business has become almost universal and of the nature of an obsession. "Our whole competitive system," as Henry Ford (certainly not an enemy of business) declares, "our whole creative expression, all the play of our faculties seem to be centered around material production and its by-products of success and wealth." The philosophy of business is more widely disseminated in the public mind, more deeply ingrained in the public emotions, more thoroughly integrated in public habit than at any time in history. In the pervasive vernacular of this philosophy, business has sold business to mankind—at any rate to

that part of mankind known in the Occident as civilized; and the uncivilized peoples are regarded as good prospects.

But the most ominous feature of the situation is not the general absorption in business, deplorable as that is. Far worse, from the cultural and humanitarian point of view, is the threatened assumption by business men of leadership in man's aspirational life. Business men have for a long time exercised influence over the institutions charged with the nurture of social and moral ideas. This, however, has been indirect, more or less sporadic, and largely uninformed. The generally acknowledged breakdown of traditional sanctions has offered them an excellent occasion for taking the matter more directly in hand. With the self-confidence and aggressiveness acquired in their own field of operation they have entered upon the task of placing idealism "on a business basis," and then of "putting it across." Backed by unnumbered speeches before "service" clubs and articles in business magazines, and aided by the ramifying

arm of governmental agencies, the propaganda for "practical idealism" is going forward. Educators are co-operating to conform the subject matter and method of public education to the specific demands made upon them by leaders in the business world, while clergymen all over the country are enjoying the new exhilaration of hobnobbing with wordly success and translating the experience into church technique and religious terminology. Startling as the thing would have been a generation ago, it is natural enough today that the book which presents the Nazarene as "The Founder of Modern Business" should be announced by the author as "A Discovery of Jesus," should be advertised by the publisher as a "sincere and reverent effort to picture Jesus Christ as he really was," and should be endorsed by preachers as "original and impressive," "a finer interpretation of Jesus and His teaching than any I have ever read," "great, just wonderful!"

Modern business, then, has its philosophy; the "Gospel of Goods" a leading business

journal calls it. And this philosophy may be epitomized in three cardinal doctrines:—

I. The hopes men set their hearts upon are to be dictated by business men: in large matters, and ultimately, by the great industrial and financial leaders; in small matters, and immediately, by the business fraternity in every community.

II. The technological means for the realization of these hopes are to be furnished by men of science. It must be their privilege to further the ends of business through the discovery and application of natural laws.

III. The apprenticeship necessary to prepare the rising generation to take its place quickly and efficiently in the industrial system, is to be supervised by the educators; and to foster devotion to those moral and religious codes wanting which the mass of men cannot be held to habits of sobriety and industry, but are prone to attempt radical reconstructions of the economic order, is the obligation of religion.

Now it should not only be admitted, but emphasized, that the business man performs an important function in modern life, and that a

business career may be as honorable as any. Hundreds of men and women engaged in business pursuits are filling places of usefulness in the community with a sense of workmanship, ideals of integrity, and devotion to the common weal. And there are business houses that have a fine appreciation of their rôle in the social economy. But these are exceptional. The vast majority are of the type who make up such movements as the "Dare to Be a Babbitt" campaign originating in the nation's capital. And all of them are victims of the hard-fisted gentlemen with the iron jaws and the faultless clothes, the gentlemen who, proud of their crass ignorance of the history of man's spiritual struggles and of his long hunger for beauty in life, have but one ideal—"a life ambition," as the most widely known business man in America has put it, "a life ambition to make the industrial desert bloom like the rose, and the workaday life suddenly blossom with fresh and enthusiastic human motives of higher character and efficiency." They are the shepherds who drive the flock.

The encroachment of business into every domain of life—it is this, rather than the growing popularity of science (as many think) or the greater independence of youth (as many others think) which constitutes the most sinister threat against the deepest interests of mankind; which has indeed in many ways already destroyed the very conditions upon which these deepest interests must depend if they are to live. This danger we must meet head-on. We must refuse to admit that the great hopes of men should be defined with an eye primarily, if not solely, on business. We must resist the dogma that the development of human potentialities should mean the perfection of man's capacity as a producer of commodities; that freedom of will should mean liberty to produce, transport, and consume more and more goods; that morality should mean to find and to keep one's place as a cog in the industrial machine. We must have the courage to look this philosophy in the eye: to frustrate it in its more arrogant form, to outwit its subtler maneuvers. Above all, we must show ourselves equal to winning youth,

however slowly, to a different concept of life than this philosophy implies. And this will cost a price. It will demand consecration. For if youth is to be won to a more worthy society it will not be by those who make pleasure, money, or the sheer sense of power the greatest good; least of all by those who have made the word service morally obsolete.

Shall business have a *place* in life, or *be* life? There is the issue, and you make your choice. It is the issue below the doctrinal ferment in the churches. It is the issue behind dramatic debates on educational theory. It is the momentous social question of our time. And to this challenge the man or woman of understanding who is concerned for human hopes can make but one reply. It is an old reply, made by those in all times whose imaginations were touched by the upward striving of humanity and who had caught a vision of an earthly life growing in joy and beauty through the brief allotted years: Render unto Cæsar the things that are Cæsar's—but remember he is Cæsar, not God.

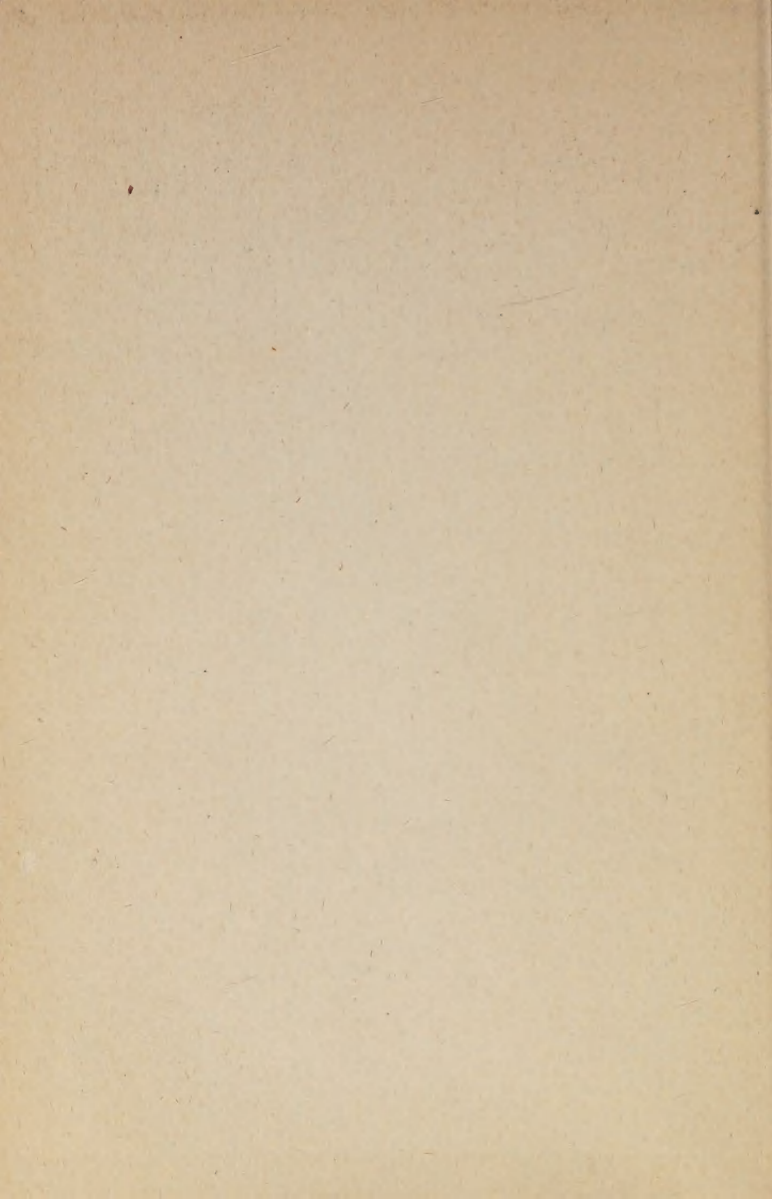
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